WHAT IS CLAIMED IS:

1. A method of controlling congestion in a communications network, the method comprising:

detecting a potential network congestion condition; and

upon detection of the potential network congestion condition, controlling new traffic emitted into the network to not exceed a fixed bandwidth estimated for the connection.

2. The method of claim 1, further comprising estimating the bandwidth for the connection to be an amount of traffic being emitted into the network at the time the potential congestion condition is detected.

3. The method of claim 1, wherein the network is a private network.

4. A method of controlling congestion in a communications network, the method comprising:

detecting a potential congestion condition in the connection; and

upon detection of the potential congestion condition, controlling new traffic emitted into the network to be no more than a current traffic load of the network at the time of detection.

5. The method of claim 4, wherein the network is a private network.

6. A method of controlling congestion in a communications network, the method comprising:

determining whether a congestion condition is present;

when a congestion condition is present,

setting a congestion window size to a prescribed value; and

controlling traffic from a sender delivered onto the network so that the amount of unacknowledged traffic from the sender on the network does not exceed the congestion window size.

7. The method of claim 6, wherein the prescribed value is the lesser of a current amount of unacknowledged traffic emitted by the sender into the network at a time of detection of the congestion condition, and a current receiver buffer size at that time.

8. A method of controlling congestion in an effectively constant bandwidth connection comprising:

detecting a potential congestion condition; and

controlling bandwidth of the connection to be no more than the lesser of an unacknowledged traffic level at a time of the detection, and a receiver buffer size.